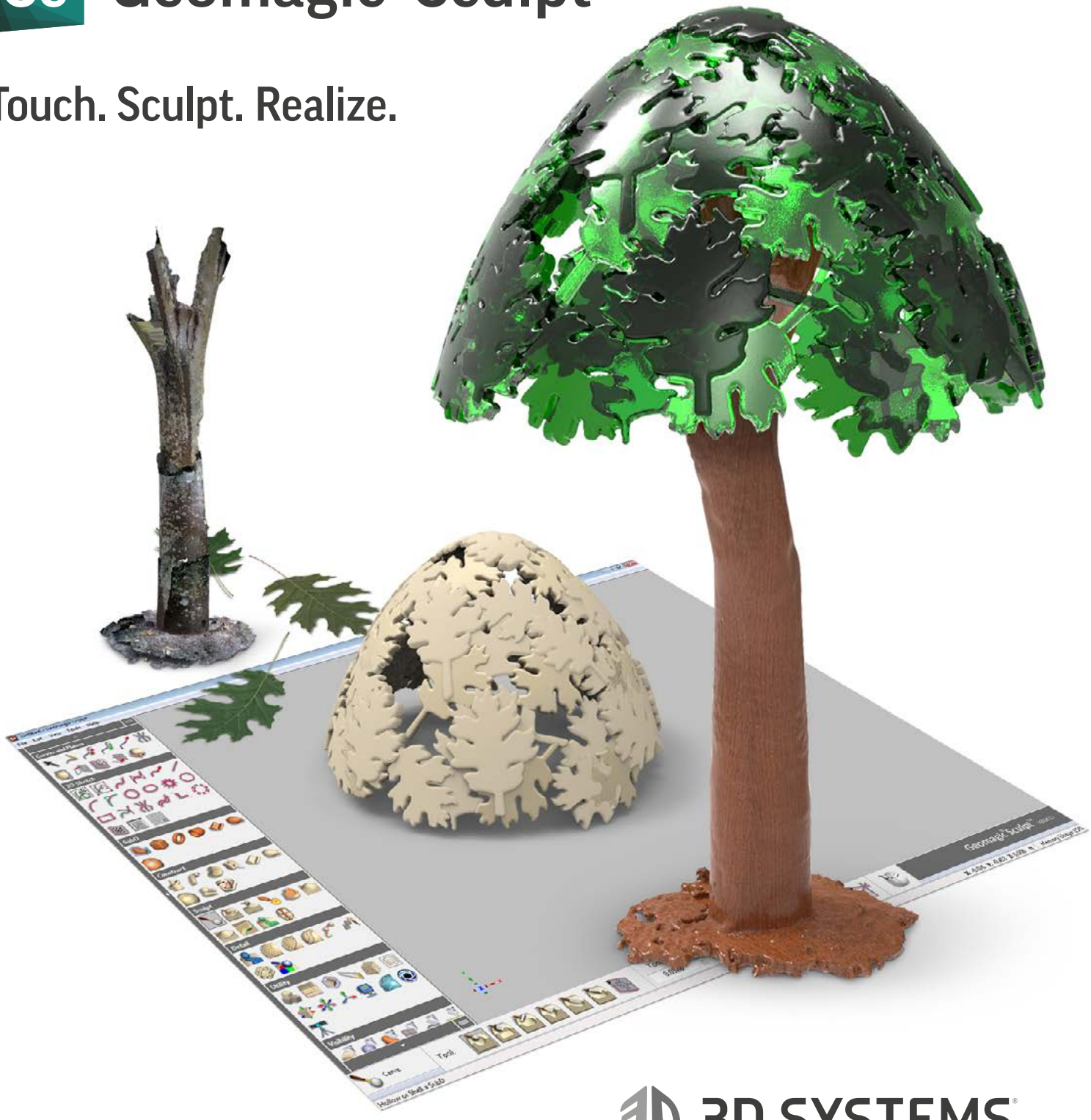
Geomagic® Sculpt™

Touch. Sculpt. Realize.



3D SYSTEMS

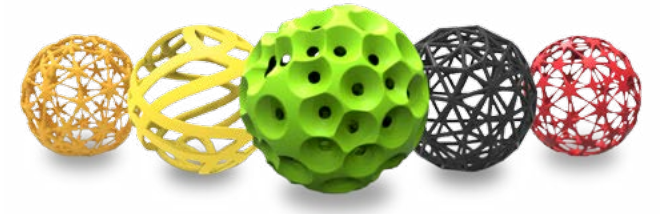
Geomagic® Sculpt™

Geomagic® Sculpt™ is a simple, fast, yet sophisticated precision voxel modeling software solution. Create organic designs, edit, and transform existing 3D data with sculpting, shaping and detailing tools not found in traditional CAD software. Get the sensation of clay modeling with the benefits of digital design.

Virtual Clay Modeling

Create exactly what you want. With Sculpt you can harness the power of virtual clay to easily create exquisitely complex and organic forms. Use real world sculpting concepts in a digital environment with the power of tug, ridge, emboss and deform just like real clay modeling. Sculpt is incredibly intuitive; you can use a traditional mouse or feel your design when you use a Geomagic Touch™ haptic stylus.

Add Structure to Your Design



Geomagic Sculpt's brand new StructureFX™ capability is a powerful toolset for reducing time spent in complex workflows. Select from a palette of existing effects to rapidly create complex lightweight structures and cages in designs. The StructureFX tools work alongside the 3D print analysis tools for perfect and successful 3D printing of impressive designs.

Incredible Detailing Tools

Fine tune the smallest elements and make products stand out. Sculpt lets you create textures of any complexity in virtual clay. Use embossing tools to create design flourishes, which are often impossible in CAD. Simply import any image and go. The texture you see is the texture you get when 3D printing the model.

Photorealistic Rendering

Make renderings that impress clients and astound colleagues with the high definition KeyShot for 3D Systems. Show clients what they are getting before it's made and win more bids. A wide range of preset materials, lights and cameras let you quickly create stunning renderings.

Seamlessly Enhance Your CAD Models

Geomagic Sculpt works alongside your current CAD software to provide that elusive, beautiful industrial design in combination with CAD's functional models. Sculpt is fast and very easy to use offering a huge step forward from notoriously complex surface modeling packages.

Touch. Sculpt. Realize.

Add the Sense of Touch to Your Digital World

3D Systems haptic devices provide true three-dimensional navigation and force feedback integrating a sense of touch into the Geomagic Freeform® and Geomagic® Sculpt™ 3D modeling systems as well as research and commercial applications. The devices use motors to create forces that push back on the user's hand to simulate touch and interaction with virtual objects.

Discover Sculpting Freedom

Sculpt is the only software that combines the benefits of voxel modeling and Sub Divisional (SubD) surface modeling with dimension-driven sketch tools. You can create exactly the geometry you envision, using constraints where you need to and omitting them where you don't.

3D Print-Ready

You can cut the guesswork, because Geomagic Sculpt produces 3D-printable files every time. No more wondering if your design is solid or watertight.

Sculpt will even check for common printability issues, like feature size, undercuts, downward facing surfaces and printer volume and flag them so you can make changes before you print.

Easily Communicate in 3D

The stand-alone Freeform Viewer will display various views of clay models from Geomagic Sculpt and Geomagic Freeform with the ability to view or hide construction elements, mesh pieces and SubD surfaces. Simple visualization, zoom, rotate, pan, measure and cutaway tools allow others to review a model without having to be proficient in the software.

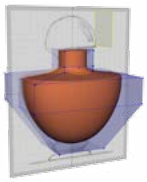
Capture to Sculpt

Get a sense of the real world in the digital world and leverage existing shapes and designs. Scan physical objects directly into Sculpt with the Geomagic® Capture™ scanner – the powerful, integrated, industrial-grade 3D scanner and import scan data from other scanners into your software.

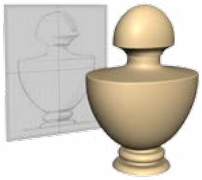
Workflows Sample Concept Model Workflow

1 Concept Sketch → Base SubD Model → Convert to Clay → Add Texture Detail → Complex Shelling → Make

Sketch your idea



Scan and import sketch, and quickly make a model using SubD surfaces



Turn your design into digital clay

Add detail to bring your design to life

Make it hollow with never-fail shelling

Your design is ready to print!

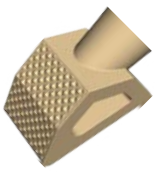
2 3D Scan with Sense™ → Cleanup & Resculpt Detail → 3D Scan with Capture® → Rebuild Prismatic Forms → Add Texture → Combine Two Models

360° head scan

Perfected scan with added detail

Precision scan of existing design

Idealized geometry with exact dimensions

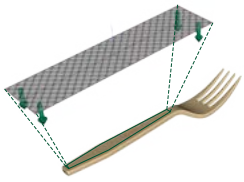


Embossed model

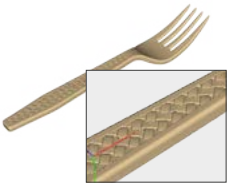
Custom football player in minutes!

3 Import CAD File → Import Texture Image → Apply Texture → OR Add a Logo → OR Sculpt Artistic Detail

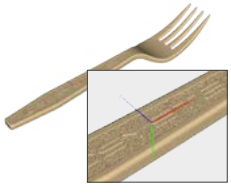
Import any geometry as a mesh



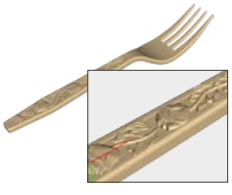
Import any bitmap image



Engrave/emboss in 3D



Add logos on top of complex texture



Add details that are impossible in CAD

Geomagic Sculpt and Freeform Feature Comparison

Geomagic's organic 3D engineering systems transform the way designs are brought to life, and meet a full spectrum of design needs. Geomagic Sculpt offers simple but fast organic design to 3D print. Geomagic Freeform provides more tools for advanced design, and Freeform Plus takes the toolset to the next level by providing extensive hybrid design support, broader interoperability, and the tools you need to prep your part for mold tooling and manufacturing.

KEY PRODUCT FEATURE	SCULPT	FREEFORM	FREEFORM PLUS
Voxel-based modeling	●	●	●
Mesh conversion and boolean support	●	●	●
SubD surfacing, modeling	●	●	●
StructureFX - LayerFX, CageFX, SurfaceFX	●	●	●
Full HD color rendering with KeyShot for 3D Systems	●	●	●
Manual patterning of pieces onto surfaces or in free-space	●	●	●
Automatic surfacing of clay or polygon models for export as NURBS surfaces	●	●	●
Direct Geomagic Capture scanning	●	●	●
3D printability analysis	●	●	●
Integration with 3D Sprint	●	●	●
Independent clay file viewer	●	●	●
2D Sketch tools, including Outlined Text New	●	●	●
Export of Orthographic or Turntable Modes (bmp, jpg, or png with transparency option) New	●	●	●
3D import of polygon and CAD neutral formats (.stl, .obj, .ply, .xml, .zpr, .iges, .stp, .step)	●	●	●
SubD surface texturing		●	●
StructureFX - CellularFX (Lattices)		●	●
Bend and twist tools		●	●
Cage and lattice deform		●	●
2D Slicer tool for part analysis as well as extraction of sets of offset images and profiles New		●	●
Shell Cut creates new surface following layer of profile cut objects New		●	●
Conversion of SubD to NURBS			●
Batching and background processing of reduce and export			●
Wrap for Freeform			●
CAD solids and surface tools			●
Complex draft analysis and correction			●
Automated mold parting line function			●
Mold parting surface extrusion from parting line curves			●
3D import of CAD native formats (.x_b, .x_t, .sldprt)			●

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Authorized Partner

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Snake ring design courtesy of Harry Hamill, harryhamilldesigns.com

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